

5 May 2023 – Neuss, Germany

Rating Action / Update:

Creditreform Rating has upgraded the unsolicited corporate issuer rating of Holcim Ltd to **A-** / **stable**

Creditreform Rating (CRA) has upgraded the unsolicited, corporate issuer ratings of Holcim Ltd and Holcim Finance (Luxembourg) S.A. – together referred as Holcim, as well as the unsolicited corporate issue rating of long-term local currency senior unsecured notes issued by Holcim Finance (Luxembourg) S.A. from BBB+ to **A-**. The outlook for the ratings has changed from positive to **stable**. We also refer to the rating update of the rating report of 6 December 2022, which contains further relevant information with respect to the structural, business and financial risk of the Company.

Current relevant factors for the rating

The following considerations were of specific relevance for the rating assessment:

- Globally leading cement manufacturer with a well-diversified business profile (geographically and in terms of products)
- Improvements in Holcim financial key figures over the last years despite ongoing challenging conditions
- Strong liquidity, partly due to cash proceeds from divestments, mainly in the cement business, helping to finance Holcim's plan to transform into a more sustainable respectively green business model
- Prudent financial policy with a net financial debt / recurring EBITDA of under 1.5x in the last three years, and commitment to maintain this through 2025
- Despite adverse market conditions - rising interest rates, still high commodity and economic slowdown affecting the construction sector - outlook rise due to positive business development and good order situation in the first quarter 2023
- Uncertainty about further geopolitical course and economic consequences in medium-term
- The Company continues to face high investment and innovation requirements due to stricter environmental policy

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ESG factors are factors related to environment, social issues and governance. For more information, please see the section "Regulatory requirements". CRA generally takes ESG-relevant factors into account when assessing the rating object and discloses them when they have a significant influence on the creditworthiness of the rating object, leading to a change in the rating result or the outlook.

ESG-criteria:

CRA generally takes ESG factors (environment, social and governance) into account within its rating decisions. In the case of Holcim Ltd we have not identified any ESG factors with significant influence.

The environmental and climate impact of cement production is particularly severe. Roughly 8% of global greenhouse gas emissions are caused by cement production.¹ Against this background, Holcim is, as a globally leading cement producer (Top 3), particularly subject to climate protection targets and stringent regulations related to carbon dioxide emissions (CO₂ emissions) at national and international levels, in particular with regard to the European Union Emission Trading System. Holcim is committed to exploiting existing potential for improvement and developing such potential in order to reduce CO₂ emissions. In addition to stepping up the use

¹ Ellis, L. D., Badel, A. F., Chiang, M. L., Park, R. J.-Y. & Chiang, Y.-M. Proc. Natl Acad. Sci. USA 117, 12584–12591 (2020).

of renewable energies and converting materials from construction and demolition waste, Holcim aims to offer more low-carbon and climate-neutral products, and in April 2023 it introduced its new circular technology platform ECOCycle®, with the objective of accelerating construction and demolition materials. In addition, the Company has joined the Science Based Targets Initiative (SBTi) "Business Ambition for 1.5°C" and, together with SBTi, has validated interim targets on its path of reduction towards net zero emissions by 2050.

In order to achieve its ambitious goals of carbon-neutrality by 2050 and offering green products, the Company is strongly engaged in the development of disruptive technologies. The Company already offers a broad spectrum of sustainable materials and house building solutions. The Holcim products ECOPact, a CO₂-reduced concrete solution, and ECOPlanet, a CO₂-reduced cement, enable a lower CO₂-footprint with a reduction of between 30% and 80% compared to standard materials. Due to its 3D Tector Print, buildings require up to 50 percent less material. Also, its greenhouse building solutions with focus on sustainable roofing and insulation systems are able to reduce the CO₂ footprint. The expanded range of services is projected to attract green infrastructure projects financed by public funds, enabling resilient cash flows.

Finally, in order to achieve the net zero target in cement production, the Company, like other leading cement producers, relies on the development of carbon capture and use, or storage (CCUS). In this context, Holcim is currently conducting more than 50 pilot projects worldwide to explore CCUS technology and find a scalable and cost-effective CCUS solution by 2030. It plans to invest in total CHF 2 billion until 2030 in mature technologies with the aim of capturing more than 5 million metric tons of CO₂ annually. The sustainability strategy pursued by the Company was also reinforced by the issuance of sustainability-linked bonds and is in line with the United Nations Sustainable Development Goals, which are intended to ensure sustainable development at economic, environmental and social levels.

We cannot not currently identify any significant adverse material impact on the rating as a result of the environmental and climate impact of cement production; however, this could change in future, e.g. due to stricter regulatory requirements or failure to achieve its targets in the long-term. The Company, however, invests in order to fulfill, ensuring profitability by using its sustainable building solutions as competitive advantage.

With regard to governance factors, Holcim's subsidiary Lafarge S.A. was accused of providing material support and resources to terrorist organizations during the civil war in Syria.² Holcim, which acquired Lafarge in 2015, pleaded guilty before the US Department of Justice and was fined USD 778 million. This has no material impact on the valuation as it was more than offset by positive one-time effects in the income statement (see Business Development section). In addition, the decision contains a three-year probationary period with certain conditions.

Lafarge is also currently subject to litigation in Paris due to the same matter. The case is still under investigation. In December 2022 and January 2023, two further two civil lawsuits were filed by family members of U.S. citizens killed in terrorist attacks in Syria, Iraq, Libya, Jordan, France and Spain from 2015 to 2016. The charge alleges that Lafarge SA and Lafarge Cement Syria supported the terrorist organizations that carried out these attacks. The Company stated that the outcome of these matters is currently uncertain, including any possible impact on Lafarge SA.

² To protect its operating Syrian cement plant, former Lafarge executives paid approx. over USD 10 million between 2013 and 2014, among others to the Islamic State.

Overall, we see past governance failures of Lafarge S.A., which have a monetary impact on Holcim's present operations, and an environmentally detrimental business model in its original design, but also technological advances to reduce carbon emissions and an overall improving ESG policy in the Company, particularly as regards its current strategy. At this stage, we believe that the Company's more sustainable business model remains essential for the transition to a more climate-friendly economy, albeit requiring further investments and research progress. With regard to the Company's still very high CO₂ emissions, stricter regulatory measures or other monetary consequences could follow, constraining Holcim's profitability in the medium- to long-term, and with implications regarding adverse ESG factors. The aforementioned aspects, including legal concerns remain to be critically observed.

A general valid description of Creditreform Rating AG, as well as a valid description of corporate ratings for understanding and assessing ESG factors in the context of the credit rating process, can be found [here](#).

Rating result

The current unsolicited corporate issuer rating of **A-** attests Holcim Ltd a high level of creditworthiness, representing a low default risk. The rating upgrade is based on a sustainable improvement in Holcim's financial analysis since CRA's unsolicited initial rating (8 May 2019: BBB+ / stable), despite temporarily challenging market conditions. The Company was able to deliver strong results during the COVID-19 pandemic, as well as in the present energy crisis, as result of its leading position in its key markets and its well-diversified business model.

Holcim is a worldwide leading cement producer with very good geographical diversification and, despite strong competition on the local markets, a solid competitive force due to its highly sophisticated product range in house building solutions. The Company has a satisfactory and resilient earnings capacity and pursues a prudent financing policy in line with a strong liquidity position, which is the foundation for its solid financials. We see the Company's target of keeping the net financial debt / recurring EBITDA ratio under 1.5x, as well as its strategy focusing on mature markets and sustainability, as favorable and aligned with the requirements which the industry is faced with. The Company's exposure to risks related to its high sensitivity to economic developments, the demand for construction materials, energy intensity and exposure to volatile energy prices, dependency on environmental requirements, and above-average local competition, has a dampening effect on our rating assessment.

Outlook

The one-year outlook is **stable**. We expect the Company to continue to solid development based on its broader product structures, enabling operating performance to remain overall unaffected by the current adverse circumstances (inflationary costs, rising interest rates and economic slowdown) and to maintain its financials similar to their current level in line with Holcim's outlook³.

³ Published on 21-04-2023 — Holcim Q1 2023 Results Media Release

Please note:

The scenarios are based on information available at the time of the rating. Within the forecast horizon, circumstances may occur that could lead to a change of the rating out of the indicated range.

Best-case scenario: A-

In our one-year best-case scenario, we assume a rating of A-. Due to current market conditions for the industry, we consider a further upgrade to be unlikely. In this scenario, the current solid business development continues in 2023, contributing to further improvement in organic profitability and internal financing power. The result of the financial ratio analysis should maintain stable, comparing to recent years, despite slight increases in interest expenditure due to higher interest rates and slightly reduced financial strength compared to 2022, due to ongoing M&A transactions.

Worst-case scenario: BBB+

In our worst-case scenario for one year, we assume a rating of BBB+. This could be the case if profitability significantly worsens in 2023 as a result of rising interest rates and economic instability leading to a significant decline in sales which cannot be sufficiently compensated by price increases. A significant increase in indebtedness without a compensating EBITDA improvement as result of Holcim's transformation and expansion path could also have a negative impact on the rating assessment.

Against the background of continuing adverse market conditions and current high uncertainty due to the geopolitical situation and its weakening effect on the global economy, negative impacts on the Company's financial position, and increasing pressure on profit margins, a downgrade by one notch cannot be ruled out.

Business development and outlook

Despite significant adverse market conditions, especially for this energy-intensive industry, the Company was able to achieve record net sales and results in 2022, largely due to successful price increases offsetting inflationary costs, and its ongoing transformation focusing on sustainable building solutions and mature markets.

According to the Company, net sales⁴, amounting to CHF 29,189 million (2021: 26,834 million), grew by 8.8% compared to 2021 and organically by 12.9%, driven by strong price increases in all segments and the fast expansion of the segment Solutions and Products. The reported growth figure (IFRS) was smaller compared to the organic growth due to the divestments in India and Brazil in September 2022, and adverse foreign exchange rate effects. Analytical EBIT amounted to CHF 4.650 million (2021: 3.716 million), up by 25.1% benefiting from a disposal gain of CHF 2,084 million from the divestment in India, more than offsetting adverse one-off effects of over CHF 1,701 million⁵. Excluding one-off effects as well as scope and foreign currency effects, the reported recurring EBIT on an organic basis showed an improvement of 7.2% compared to 2021. The organic growth was a result of price increases compensating for inflationary costs, cost mitigation measures, and improved margins in the Company's roofing business. The recurring EBIT margin of the Group decreased slightly from 17.2% in 2021 to 16.3% in 2022, in particular due to a lower margin in Asia Pacific against the background of inflation and the COVID-19 lockdowns in China.

⁴ Sales after deducting allowances for damaged or missing merchandise and returns.

⁵ Adverse one-off effects were in particular a financial penalty of CHF 767 million, in connection with Lafarge S.A. legacy operations in Syria during the country's civil (for more details see chapter ESG factor), an impairment of CHF 623 million due to planned divestments in Russia for 2023, a disposal loss of CH 311 mainly in connection with the divestment in Brazil and in Middle East Africa.

Table 1: Financials | Source: Holcim Ltd Annual Report 2022, standardized by Creditreform Rating AG (CRA)

Holcim Ltd Selected key figures of the financial statement analysis Basis: Annual accounts and report of 31.12. (IFRS)	CRA standardized figures ⁶	
	2021	2022
Sales (million CHF)	26,834	29,189
EBITDA (million CHF)	6,036	6,810
EBIT (million CHF)	3,716	4,650
EAT (million CHF)	2,681	3,528
EAT after transfer (million CHF)	2,298	3,308
Total assets (million CHF)	52,125	50,155
Equity ratio (%)	48.02	48.56
Capital lock-up period (days)	50.94	49.93
Short-term capital lock-up (%)	19.61	14.31
Net total debt / EBITDA adj. (Factor)	3.31	3.17
Ratio of interest expenses to total debt (%)	2.11	2.36
Return on investment (%)	6.05	7.88

In 2022, in line with its strategy, the Company made several acquisitions focusing on Europe and North America, maintaining a stable capex level of roughly CHF 1.4 billion (2021: 1.4 billion) and free cash flow after leases of approximately 3.5 billion⁷ (2021: CHF 3.3 billion), well above Holcim's target of CHF 2.5 billion. Including participation investments and divestments, the free cash flow after leases amounted to EUR 2.1 billion (2021: CHF -27 million), however, thanks to a cash inflow of CHF 6.1 billion due to the stake disposal of its business in India. As a result of high cash proceeds⁸, in total CHF 7.3 billion, the Company was able to increase liquidity by roughly CHF 3.1 billion and reduce gross financial debt by CHF 775 million compared to 2021. As of 31 December 2022, Holcim had cash and cash equivalents of CHF 9.8 billion and undrawn committed credit lines of CHF 5.4 billion, covering current financial liabilities roughly 9.2 times, enabling Holcim a comfortable financial headroom for its ambitious transformation plan. Holcim's own leverage ratio net financial debt / recurring EBITDA stood exceptionally at 0.9x (2021: 1.4x) and CRA's net total debt / EBITDA adj. at solid 3.17x (2021: 3.27x in 2021). The other financial key figures also once again showed sound levels, despite a slight increase in the ratio of interest expenses to total debt (see Table 1).

The first quarter of 2023 also continued to be positive, although net sales and operating profit dropped significantly y-o-y, largely as a result of the divestments, mainly in cement business in 2022 and to a lesser extent due to negative currency effects. The Company recorded a decline of 11.1% in net sales, and 19.7% in recurring EBIT. However, excluding perimeter changes and currency effects, Holcim recorded organic growth of 8.0% in net sales and 12% in recurring EBIT compared to the first quarter of the previous year, despite ongoing adverse market conditions. The organic increase in recurring EBIT was driven by all regions except North America, which

⁶ For analytical purposes, CRA adjusted the original values in the financial statements in the context of its financial ratio analysis. For example, when calculating the analytical equity ratio, deferred tax assets, goodwill (entirely or partly), and internally generated intangible assets are subtracted from the original equity, whilst deferred tax liabilities are added. Net total debt considers all balance sheet liabilities. Therefore, the key financial figures shown often deviate from the original values of the company.

⁷ The figure does not include the penalty payment for the resolution with the US Department of Justice of CHF 767 million.

⁸ In 2023 cash proceeds totals USD 7.3 billion, primarily from India and Brazil.

recorded an organic decline of 40.3% compared to Q1 2022, caused by the Company's Roofing business. The decline was as a result of the high baseline in the first quarter of last year, when clients had larger inventory to counteract supply shortages, whereas inventory levels have now normalized. Holcim considers the decline in volume as temporary due to its good order book situation, and expects easing as soon as the construction season progresses.⁹

Table 2: Business development of Holcim Ltd in Q1 2023 | Source: Q1 Trade Update 2023 – Media release, reported information

In million CHF	Q1 2022	Q1 2023	Δ %	Δ % organic
Net Sales	6,440	5,725	-11.1%	+8.0%
Recurring EBIT	614	493	-19.7%	+12.0%

In strategic terms, Holcim already closed 12 acquisitions on the segments Aggregates, Ready-Mix Concrete and Solutions and Products in the first quarter of 2023. The most significant milestone was the acquisition of the US roofing systems company Duro-Last for USD 1.3 billion, complementing its driving force roofing market. For the end of 2023, North America's net sales contribution is set to increase to 40% (2019: 24%) and recurring EBIT above 40% (2019: 26%) by 2023, by expanding significantly in its sustainable product portfolio in line with its 2025 strategy of accelerating green growth, to become the leader in sustainable building solutions. In view of the positive trend and a good order situation in all business areas, Holcim has raised its business outlook in terms of sales and results for the full year, and now projects organic net sales growth of above 6% (previously 3 to 5 percent) and organic growth in recurring EBIT of above 10% (previously no numeric specification). It also expects to achieve a recurring EBIT-margin above 16% and free cash flow after leases of roughly CHF 3 billion.

Despite the positive and confident outlook, market conditions are still marked by high uncertainty, significantly impacting the construction sector. Although supply shortages are slowly dissolving and energy prices are declining, the still high commodity prices in Europe, rising interest rates and global economic slowdown as a result of geopolitical tensions impacts house building. The medium-term economic consequences and further geopolitical course are still unclear at this stage. So far, however, Holcim has been able to pass increased costs to customers, which has contributed to very stable results in our financial ratio analysis and helped determine the rating upgrade. Its strong operating performance in recent years has also been the result of its transformation measures, enabling a more profitable, resilient and diversified business model with regard to geographical and product aspects. Holcim has diverse infrastructure projects in its pipeline, relying on the public sector as key growth driver for its sustainable building solutions. The Company expects further competitive advantages in state-funded construction based on its low CO₂ materials and construction solutions.

Overall, the Company was able to improve operationally as well as strategically in the past year. Holcim again proved that its specific business model is crisis-resilient while other companies in the sector recorded significant declines. In addition, it has a stable and prudent financial policy, helping Holcim to cope with the high investment requirements. Nevertheless, the still unfavorable market conditions, together with the worsening global economic climate and stricter environment regulations with regard to the Paris Agreement could dampen Holcim's promising development and expansion path in the medium to long term. Still, due to its successful track

⁹ Source: Analyst Conference Call on 21-04-2023.

record, we see the Company to be well-positioned to deal with the persisting uncertainty, considering its improved financial strength and its transforming business plan as its key resource.

Issue rating

In addition to the rating of Holcim Ltd the following issuer and its issues (see below), have been rated.

- Holcim Finance (Luxembourg) S.A.

Due to the corporate, strategic, liability, financial, economic and performance-related interdependency of the aforementioned subsidiary (which is direct 100% subsidiary of Holcim Ltd and which have been consolidated into the Group annual accounts) we derive the unsolicited issuer rating of Holcim Finance (Luxembourg) S.A. from the unsolicited corporate issuer rating of Holcim Ltd and set it equal to its rating of **A- / stable**. It is essential that the parent company acts as guarantor of the liabilities assessed here.

Issue rating details

The rating objects of this issue rating are exclusively the long-term senior unsecured issues, denominated in euro, issued by Holcim Finance (Luxembourg) S.A. and which are included in the list of ECB-eligible marketable assets. The ECB list of eligible marketable assets can be found on the website of the ECB.

The notes have been issued within the framework of the Euro Medium Term Note (EMTN) programme, of which the latest base prospectus dates from 3 August 2022. This EMTN programme amounts to EUR 15 billion and is unconditionally and irrevocably guaranteed by Holcim Ltd. The notes under the EMTN programme are senior unsecured, and rank at least pari passu among themselves and with all other present and future unsecured obligations of the issuer. Additionally, the notes benefit from a negative pledge provision and a change of control clause.

We have provided the debt securities issued by Holcim Finance (Luxembourg) S.A. with an unsolicited corporate issue rating of **A- / stable**. The rating is based on the unsolicited corporate issuer rating of Holcim Finance (Luxembourg) S.A. Other types of debt instruments or issues denominated in other currencies of the issuer have not been rated by CRA.

Overview

Table 3: Overview of CRA Ratings | Source: CRA

Rating Category	Details	
	Date	Rating
Holcim Ltd	05.05.2023	A- / stable
Holcim Finance (Luxembourg) S.A.	05.05.2023	A- / stable
Long-term Local Currency (LC) Senior Unsecured Issues	05.05.2023	A- / stable
Other	--	n.r.

Table 4: Overview of 2022 Euro Medium Note Programme | Source: Base Prospectus dated 03.08.2022

Overview of 2022 EMTN Programme			
Volume	EUR 15,000,000,000	Maturity	Depending on respective bond
Issuer /Guarantor	Holcim Ltd (Guarantor) Holcim Finance (Luxembourg) S.A. (Issuer)	Coupon	Depending on respective bond
Arranger	BNP PARIBAS	Currency	Depending on respective bond
Credit enhancement	none	ISIN	Depending on respective bond

The following bond was issued independently of the existing EMTN programme mentioned above. The material rating factors, including a guarantee by Holcim Ltd, are similar to those of the EMTN prospectus. The bond is thus given the same rating as the EURO bonds issued under the EMTN program (A-/stable).

Table 5: Overview of Prospectus of ISIN: XS2261215011 | Source: Prospectus dated 19.11.2020

Overview Prospectus 19.11.2020			
Volume	EUR 850,000,000	Maturity	23.04.2031
Issuer /Guarantor	Holcim Ltd (Guarantor) Holcim Finance (Luxembourg) S.A. (Issuer)	Coupon	0.500 per cent
Sustainability-Linked Structuring Agents to the Guarantor and the Issuer and Global Co-ordinators	ING, Société Générale Corporate & Investment Banking	Currency	Euro
Credit enhancement	none	ISIN	XS2261215011

All future LT LC senior unsecured Notes that will be issued by Holcim Finance (Luxembourg) S.A. and that have similar conditions to the current EMTN programme, denominated in Euro and included in the list of ECB-eligible marketable assets will, until further notice, receive the same ratings as the current LT LC senior unsecured Notes issued under the EMTN programme. Notes issued under the programme in any currency other than euro, or other types of debt instruments, have not yet been rated by CRA. For a list of all currently valid ratings and additional information, please consult the website of Creditreform Rating AG.

Appendix

Rating history

The rating history is available under:

<https://www.creditreform-rating.de/en/ratings/published-ratings.html>

Table 6: Corporate issuer rating of Holcim Ltd | Source: CRA

Event	Rating date	Publication date	Monitoring period	Result
Initial Rating	08.05.2019	14.05.2019	Withdrawal of the rating	BBB+ / stable

Table 7: Corporate Issuer of Holcim Finance (Luxembourg) S.A. | Source: CRA

Event	Rating date	Publication date	Monitoring period	Result
Initial Rating	08.05.2019	14.05.2019	Withdrawal of the rating	BBB+ / stable

Table 8: LT LC senior unsecured issues issued by Holcim Finance (Luxembourg) S.A. | Source: CRA

Event	Rating date	Publication date	Monitoring period	Result
Initial Rating	08.05.2019	14.05.2019	Withdrawal of the rating	BBB+ / stable

Regulatory requirements

The rating¹⁰ was not endorsed by Creditreform Rating AG (Article 4 (3) of the CRA-Regulation).

The present rating is, in the regulatory sense, an unsolicited rating that is public. The analysis was carried out on a voluntary basis by Creditreform Rating AG, which was not commissioned by the Issuer or any other third party to prepare the present rating.

The rating is based on the analysis of published information and on internal evaluation methods for the assessment of companies and issues. The rating object was informed of the intention of creating or updating an unsolicited rating before the rating was determined.

The rating object participated in the creation of the rating as follows:

With Rated Entity or Related Third Party Participation	No
With access to Internal Documents	No
With Access to Management	No

¹⁰ In these regulatory requirements the term "rating" is used in relation to all ratings issued by Creditreform Rating AG in connection to this report. This may concern several companies and their various issues.

A management meeting did not take place within the framework of the rating process.

The documents and information gathered were sufficient to meet the requirements of Creditreform Rating AG's rating methodologies.

The rating was conducted based on the following rating methodologies and the basic document.

Rating methodology	Version number	Date
Corporate Ratings	2.4	July 2022
Non-financial Corporate Issue Ratings	1.0	October 2016
Rating Criteria and Definitions	1.3	January 2018

The documents contain a description of the rating categories and a definition of default.

The rating was carried out by the following analysts:

Name	Function	Mail-Address
Christina Sauerwein	Lead-analyst	C.Sauerwein@creditreform-rating.de
Christian Konieczny	Analyst	C.Konieczny@creditreform-rating.de

The rating was approved by the following person (person approving credit ratings, PAC):

Name	Function	Mail-Address
Stephan Giebler	PAC	S.Giebler@creditreform-rating.de

On 5 May 2023, the analysts presented the rating to the rating committee and the rating was determined. The rating result was communicated to the company on 5 May 2023. There has not been a subsequent change to the rating.

The rating will be monitored until Creditreform Rating AG withdraws the rating. The rating can be adjusted as part of the monitoring, if crucial assessment parameters change.

In 2011, Creditreform Rating AG was registered within the European Union according to EU Regulation 1060/2009 (CRA-Regulation). Based on this registration, Creditreform Rating AG is allowed to issue credit ratings within the EU and is bound to comply with the provisions of the CRA-Regulation.

ESG-factors

You can find out whether ESG factors were relevant to the rating in the upper section of this rating report "Relevant rating factors".

A general valid description for Creditreform Rating AG, as well as a valid description of corporate ratings for understanding and assessing ESG factors in the context of the credit rating process, can be found [here](#).

Conflict of interests

No conflicts of interest were identified during the rating process that might influence the analyses and judgements of the rating analysts involved or any other natural person whose services are placed at the disposal or under the control of Creditreform Rating AG and who are directly involved in credit rating activities or in approving credit ratings and rating outlooks.

In the event of providing ancillary services to the rated entity, Creditreform Rating AG will disclose all ancillary services in the credit rating report at this point:

No ancillary services in the regulatory sense were carried out for this rating object.

Rules on the presentation of credit ratings and rating outlooks

The approval of credit ratings and rating outlooks follows our internal policies and procedures. In line with our "Rating Committee Policy", all credit ratings and rating outlooks are approved by a rating committee based on the principle of unanimity.

To prepare this credit rating, Creditreform Rating AG has used following substantially material sources:

Corporate issuer rating:

1. Annual report
2. Website
3. Internet research

Corporate issue rating:

1. Corporate issuer rating incl. information used for the corporate issuer rating
2. Documents on issues / instruments

There are no other attributes and limitations of the credit rating or rating outlook other than those displayed on the Creditreform Rating AG website. Furthermore, Creditreform Rating AG considers as satisfactory the quality and extent of information available on the rated entity. With respect to the rated entity, Creditreform Rating AG regarded available historical data as sufficient.

Between the time of disclosure of the credit rating to the rated entity and the public disclosure, no amendments were made to the credit rating.

The Basic Data Information Card indicates the principal methodology or version of methodology that was used in determining the rating, with a reference to its comprehensive description.

In cases where the credit rating is based on more than one methodology or where reference only to the principal methodology might cause investors to overlook other important aspects of the credit rating, including any significant adjustments and deviations, Creditreform Rating AG explains this fact in the credit rating report and indicates how the different methodologies or other aspects are taken into account in the credit rating. This information is integrated in the credit rating report.

The meaning of each rating category, the definition of default or recovery and any appropriate risk warning, including a sensitivity analysis of the relevant key rating assumptions such as mathematical or correlation assumptions, accompanied by worst-case scenario credit ratings and best-case scenario credit ratings are explained.

The date at which the credit rating was initially released for distribution and the date when it was last updated, including any rating outlooks, is indicated clearly and prominently in the Basic Data Information Card as a "rating action"; initial release is indicated as "initial rating", other updates are indicated as an "update", "upgrade" or "downgrade", "not rated", "confirmed", "selective default" or "default".

In the case of a rating outlook, the time horizon is provided during which a change in the credit rating is expected. This information is available within the Basic Data Information Card.

In accordance with Article 11 (2) EU-Regulation (EC) No 1060/2009, a registered or certified credit rating agency shall make available, in a central repository established by ESMA, information on its historical performance data including the rating transition frequency and information about credit ratings issued in the past and on their changes. Requested data are available at the [ESMA website](#).

An explanatory statement of the meaning of Creditreform Rating AG's default rates are available in the credit rating methodologies disclosed on the website.

Disclaimer

Any rating performed by Creditreform Rating AG is subject to the Creditreform Rating AG Code of Conduct, which has been published on the web pages of Creditreform Rating AG. In this Code of Conduct, Creditreform Rating AG commits itself – systematically and with due diligence – to establish its independent and objective opinion as to the sustainability, risks and opportunities concerning the enterprise or the issue under review.

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